

Annals of the Missouri Botanical Garden

VOL. 20

FEBRUARY, 1933

No. 1

A NEW YELLOW NYMPHAEA FROM TROPICAL AFRICA¹

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Nymphaea (§ **Brachyceras**) **Burtii** Pring & Woodson, spec. nov., foliis magnis longe-petiolatis orbiculare-sagittatis margine plus minusve conspicue undulato-sinuatis apice late obtusis vel rotundatis sinu profundo auriculis leviter divergentibus obtusis 25–35 cm. longis subcoriaceis utrinque viridibus vel saepius purpureo-maculatis glaberrimis vel umbilico paulo papillato subtus nervis manifestis sed vix prominentibus; floribus speciosissimis primulino-flavis 15–18 cm. diametro metientibus, sepalis ovato-lanceolatis acutiusculis 5–8 cm. longis 2–3 cm. latis dilute viridibus immaculatis laevibus, petalis ca. 20–23 anguste ellipticis apice acuminatis vel anguste acutis medio versus gradatim angustatis plerisque 5-nervatis exterioribus quam sepalis paulo brevioribus ca. 4.5–7.0 cm. longis 1.0–2.5 cm. latis, staminibus 190–200 linearibus connectivo manifeste elongato basi paulo ampliato exterioribus ca. 5 cm. longis dilute cadmio-flavis, carpellis 28–30 stylo linearo profunde inclinato stigmate concavo; fructu minore 3.5–4.0 cm. diametro metiente, seminibus ovoideo-oblongoideis apice minutissime apiculatis longitudine leviter punctulato-striatis griseo-brunneis maximo ca. 0.075 cm. minimo ca. 0.05 cm. diametro metientibus.—Cult. Missouri Botanical Garden, Aug., 1930, *G. H. Pring s. n.* (Herb. Mo. Bot. Garden, TYPE).

Leaves large, long-petiolate, orbicular-sagittate, margin more or less conspicuously undulate-sinuate, apex broadly obtuse or rotund, sinus relatively deep and narrow, auricles obtuse, slightly

¹ Issued April 29, 1933.

divergent, 25–35 cm. long, subcoriaceous, either surface green, or occasionally somewhat purplish-maculate, particularly when young, glabrous, or the umbilicus slightly papillate, the nerves manifest but not prominent beneath; flowers showy, primrose-yellow, very fragrant, 15–18 cm. in diameter; sepals ovate-lanceolate, acute, 5–8 cm. long, 2–3 cm. broad, pale green, without purple spots, smooth; petals about 20–23, narrowly elliptic, apex

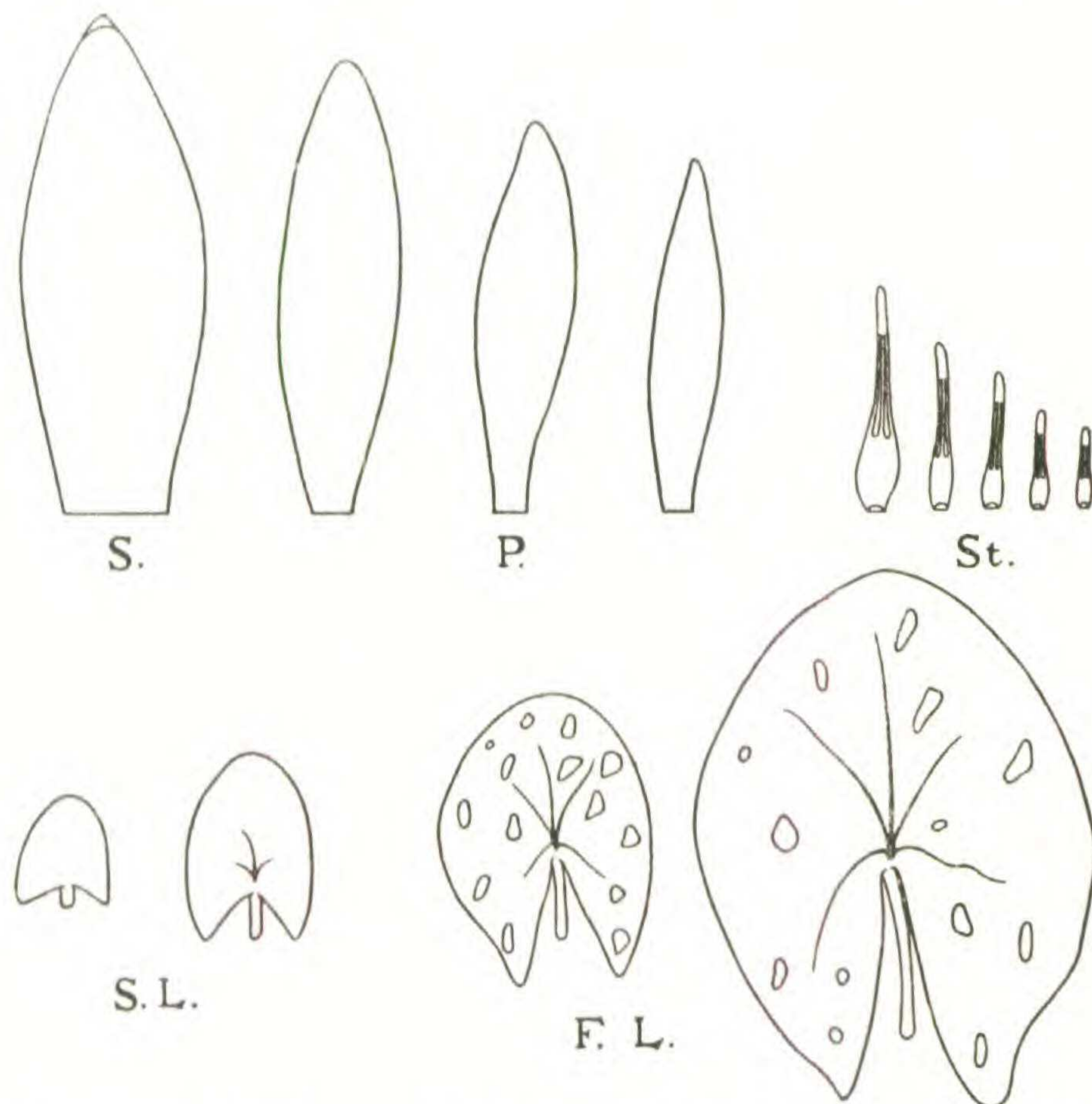


Fig. 1. *Nymphaea Burtii* Pring & Woodson: S., sepals; P., petals; St., stamens; S.L., submerged leaves; F. L., floating leaves.

acuminate to narrowly acute, the base gradually narrowed from about the middle, 5-nerved, the exterior somewhat shorter than the sepals, usually 4.5–7.0 cm. long, 1.0–2.5 cm. broad; stamens 190–200, linear, the exterior about 5 cm. long, cadmium-yellow, the connective manifestly elongate, somewhat broadened at the base; carpels 28–30, the style linear, sharply inclined, the stigma concave; fruit relatively small, about 3.5–4.0 cm. in diameter; seeds ovoid-oblongoid, minutely apiculate, rather inconspicuously

puncticulate-striate longitudinally, about 0.075 cm. long, 0.05 cm. broad, grayish-brown.—Cultivated at the Missouri Botanical Garden, Aug., 1930, *G. H. Pring s. n.* (Herb. Mo. Bot. Garden, TYPE).

Only two yellow tropical Nymphaeas have previously been described from Africa: *N. sulphurea* Gilg and *N. Stuhlmannii* Schwfth. & Gilg. The former differs from *N. Burttii* chiefly in the smaller flowers (4–7 cm. in diam.) and leaves (4.5–5.5 cm. long), which are almost exactly orbicular-cordate in outline, purplish-maculate sepals, and more elongate tubers. *N. Stuhlmannii* is easily distinguishable from *N. Burttii* by the somewhat smaller flowers (10–15 cm. in diam.), with broader, obovate, obtuse or rounded petals, and smaller (21–25 cm. long), entire leaves, which are broadly ovate-cordate in outline, with broad, rounded, regular lobes. Furthermore, the venation of the leaves of *N. Stuhlmannii* is extremely verrucose beneath. The type specimen of *N. Stuhlmannii* has not been available to the writers for personal examination, but has been compared with a duplicate specimen of *N. Burttii* by Dr. H. Melchior, of the Botanical Museum at Berlin-Dahlem, who kindly affirmed the distinction of either species. A photograph of the type specimen of *N. Stuhlmannii* (*Stuhlmann 410* in Hb. Berol.), generously provided by Dr. L. Diels, Director of the Botanical Garden and Museum at Berlin-Dahlem, has been deposited in the herbarium of the Missouri Botanical Garden.

After a search of over ten years, the director of the Missouri Botanical Garden obtained in September, 1929, a seed-pod of what was presumed to be *Nymphaea Stuhlmannii* through the personal efforts of Mr. B. D. Burtt, Esq., botanist for the Tsetse Research Bureau, Kondoa, Tanganyika Territory. An excerpt from Mr. Burtt's notes is quoted.

“The seed was collected from plants growing in a seasonal rain-pond in the Sambala ‘Mbuga’ seasonal swamp, the plants having spectacular yellow flowers 8 inches in diameter and sweet scented. The flowers float on the surface of the water and on examination were found to contain dead bees (*Apis mellifera* [?]) that were imprisoned by the anthers over the stigmatic surface of the flowers. The plants were collected on May 19, 1929, the seed from the same locality on July 15, 1929. Other plants were collected March 16, 1929, from a seasonal rain pond near Salia, Kondoa Distr. I have observed the plant in seasonal rain ponds at Magungila, Wembare Steppe in 1928, also near Lilbilin, Massai Land, in 1927.”

The single, small seed-pod, in somewhat immature condition, was received at the Garden on September 19, 1929. It was immediately cleaned, and the many seeds planted in the greenhouse water-lily tanks. Three weeks later a single seed germinated from the lot, producing its first primrose-yellow flower on June 17, 1930. On July 30, the plant was removed from its pot and planted in the pond out of doors where it continued to bloom until frost.

The successful introduction of a yellow tropical water-lily has opened an entirely new field for the hybridist. For many years the available colors in the *Brachyceras* group have been limited to blue and pink, and more recently to white through the introduction from the Missouri Botanical Garden of the hybrid "Mrs. G. H. Pring." During the past three seasons 250 pollinations have been made with the pollen of *N. Burttii*, resulting in many variable forms of commercial interest. The first season (1930) was devoted to selfing the yellow-flowered species, and many fertile seed-pods resulted. The following year twenty specimens were grown from seed and planted in the ponds out of doors. No variation in the color of the flowers was observed, but a variable character was evident in the peduncle and petioles, some being pure green, while about an equal number were brownish.

An unusual character, which appears to be dominant in all the plants, is a peculiar twisting of the peduncle, the day before the flower opens, in such a manner as to submerge the bud. The following morning, however, the peduncle straightens, holding the open flower erect in a natural position. This action has also been observed in several hybrids.

As a propagator, *Nymphaea Burttii* is by far the poorest of any grown at the Garden. Of the fifty propagating tubers secured from pot plants during the past two seasons, only one has produced growth up to the present, despite the fact that they have been in the heated propagating tanks for a period of six months. Since it is an extremely poor propagator from tubers and extreme heat is necessary for growth, it is very doubtful if it will find a place in garden pools. On the other hand, the hybrids derived from it, particularly the "Saint Louis," are both readily propagated from tubers and suitable for cooler water.

EXPLANATION OF PLATE

PLATE 1

Leaf, bud, and flower of *Nymphaea Burtii* Pring & Woodson, $\times \frac{2}{5}$.

del. A. A. Heinze



PRING & WOODSON—A NEW YELLOW NYMPHAEA